

APPENDIX 3

Appendix 3.1

Estimated Growth in CLEC Activity in LATAs Served By SBC/PacTel Relative to Growth in Other LATAs

Quarter-Specific Regressions: 1996Q1-1998Q3

Analysis Excludes LA and New York LATAs

Population (Millions)	Difference ^{1/}	Probability ^{2/}
.5	.07	.60
1.0	.22	.09
2.0	.52	.01*
3.0	.82	.01*
5.0	1.42	.02*
<u>LATA-Specific Differences</u>		
Mean	.36	-
Population-Weighted Mean	.83	-
Combined Significance	-	.05*

1/ Difference reflects increase in the number of CLECs following relevant merger date relative to increase expected absent merger (based on activity in other LATAs).

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

Appendix 3.2

Estimated Growth in CLEC Activity in LATAs Served By Bell Atlantic/NYNEX Relative to Growth in Other LATAs

Quarter-Specific Regressions: 1996Q1-1998Q3

Analysis Excludes LA and New York LATAs

Population (Millions)	Difference ^{1/}	Probability ^{2/}
.5	-.30	.11
1.0	-.23	.17
2.0	-.07	.74
3.0	.08	.83
5.0	.38	.57
<u>LATA-Specific Differences</u>		
Mean	-.13	-
Population-Weighted Mean	.08	-
Combined Significance	-	.27

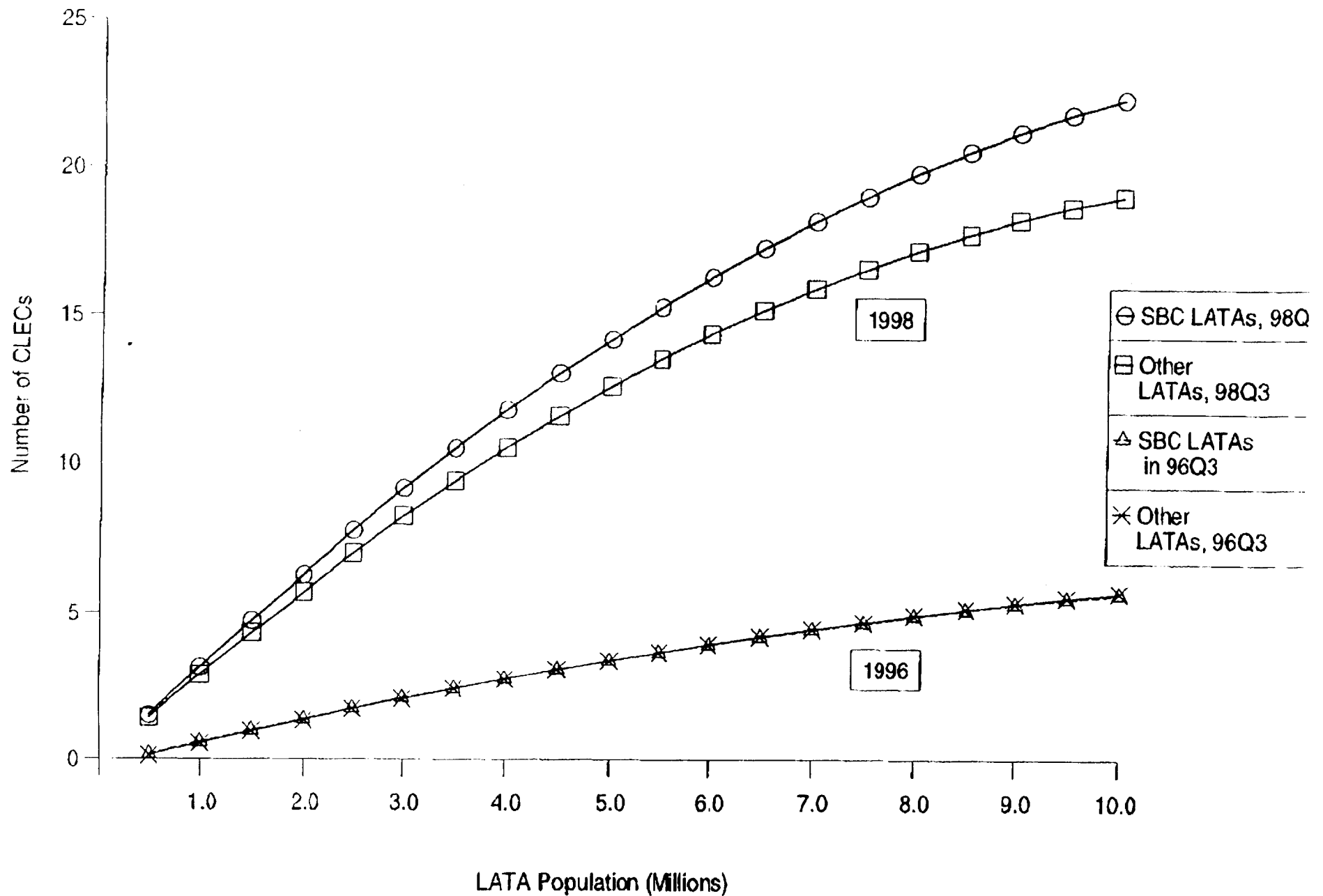
1/ Difference reflects increase in the number of CLECs following relevant merger date relative to increase expected absent merger (based on activity in other LATAs).

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

Figure 3

Estimated Number of CLECs by LATA Population: 1996Q3 and 1998Q3

SBC/PacTel and Other LATAs



Notes: Estimates derived from regression estimates.

Table 2

**Estimated Growth in CLEC Activity in LATAs Served By
SBC/PacTel Relative to Growth in Other LATAs**

Quarter-Specific Regressions: 1996Q1-1998Q3

Population (Millions)	Difference ^{1/}	Probability ^{2/}
.5	.05	.72
1.0	.22	.09
2.0	.57	.01*
3.0	.91	.01*
5.0	1.60	.01*
<u>LATA-Specific Differences</u>		
Mean	.52	-
Population-Weighted Mean	1.94	-
Combined Significance	-	.02*

1/ Difference reflects increase in the number of CLECs following relevant merger date relative to increase expected absent merger (based on activity in other LATAs).

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

by other ILECs when calculated as a simple average over SBC/PacTel LATAs and by 1.94 more than elsewhere when calculated as a population-weighted average.

51. Table 2 also reports the magnitude and statistical significance of differences in the increase in CLEC activity in LATAs served by SBC/PacTel and other LATAs following the firms' merger evaluated at different levels of LATA population. The results indicate that the relative increase in CLEC activity in the SBC/PacTel areas compared to that expected based on CLEC activity elsewhere is statistically significant overall and is also statistically significant in LATAs with population levels of two million or greater.²⁷

Bell Atlantic/NYNEX

52. The results for Bell Atlantic/NYNEX also contradict the Katz/Salop theory that CLEC activity would fall relative to the level otherwise expected following these firms' merger. Figure 4 and Table 3 summarize the results of our analysis and compare changes over time in CLEC activity in LATAs served by Bell Atlantic/NYNEX compared to those served by other ILECs. Taking all LATAs as a whole, CLEC activity in the Bell Atlantic/NYNEX territories increased by .08 more than expected based on otherwise comparable LATAs following the Bell Atlantic/NYNEX merger, as calculated on a simple average basis. On a population-weighted average basis, the increase in CLEC activity in LATA served by Bell Atlantic/NYNEX was roughly .77 more than expected based on other otherwise comparable LATAs.²⁸

53. Table 3 reports the magnitude and statistical significance of differences in the increase in CLEC activity in LATAs served by Bell Atlantic/NYNEX and others following these

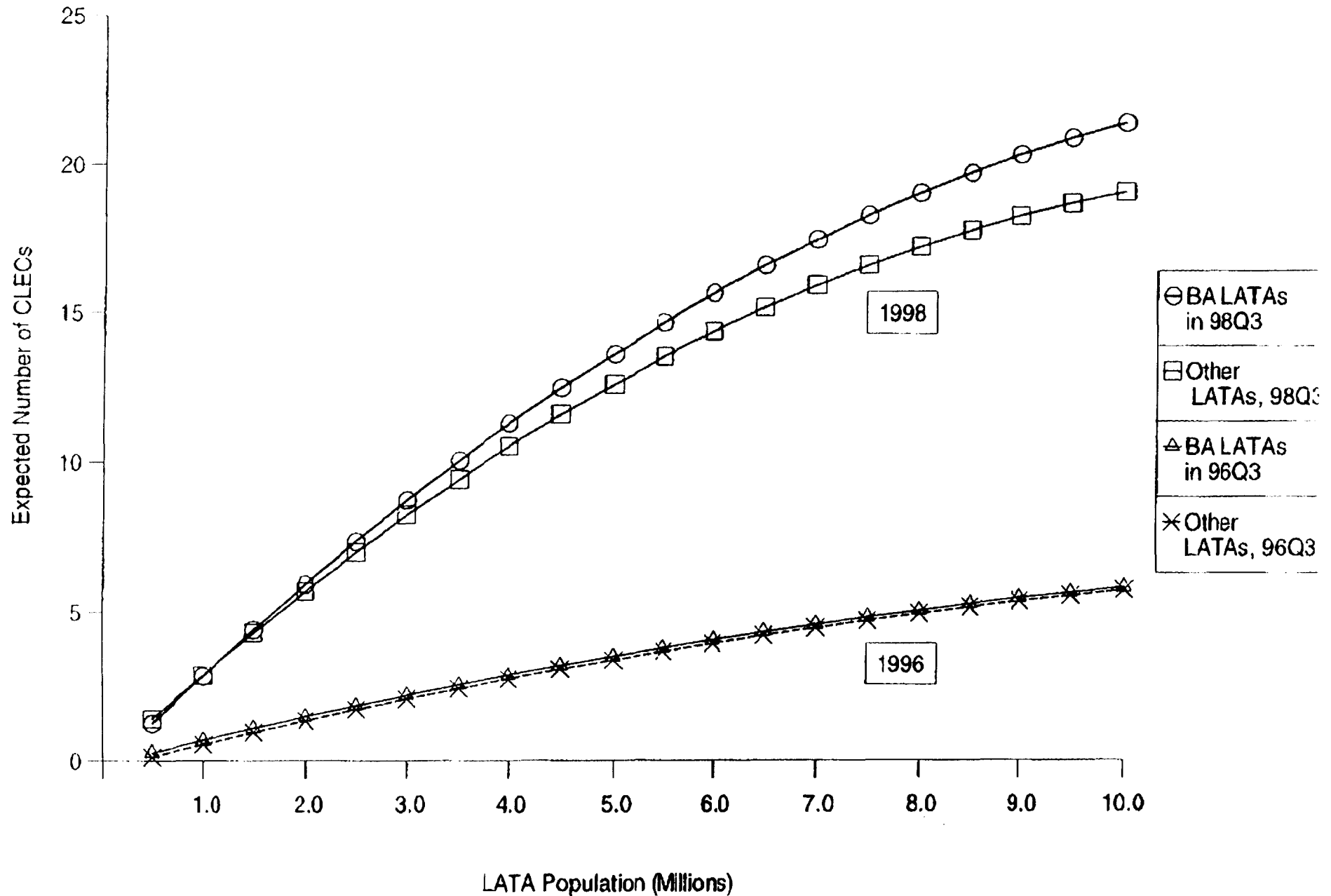
27. We have also analyzed several alternative econometric specifications to test the sensitivity of these results. Appendix 3 reports results that exclude the New York and Los Angeles LATAs from the analysis. This modification again does not alter our conclusions with respect to the impact of either the SBC/PacTel or Bell Atlantic/NYNEX mergers on CLEC activity.

28. In LATAs with population of more than roughly 1.5 million, CLEC activity grew more rapidly in Bell Atlantic/NYNEX territories than elsewhere following these firms' merger. In smaller LATAs, CLEC activity grew a bit more slowly in Bell Atlantic/NYNEX LATAs compared to otherwise comparable LATAs served by non-merged ILECs in LATAs. None of these differences is statistically significant at the five percent level.

Figure 4

Estimated Number of CLECs by LATA Population: 1996Q3 and 1998Q3

BA/NYNEX and Other LATAs



Notes: Estimates derived from regression estimates.

Table 3

**Estimated Growth in CLEC Activity in LATAs Served By
Bell Atlantic/NYNEX Relative to Growth in Other LATAs**

Quarter-Specific Regressions: 1996Q1-1998Q3

Population (Millions)	Difference ^{1/}	Probability ^{2/}
.5	-.31	.10
1.0	-.18	.27
2.0	.09	.68
3.0	.35	.29
5.0	.89	.15
<u>LATA-Specific Differences</u>		
Mean	.08	-
Population-Weighted Mean	.77	-
Combined Significance	-	.15

1/ Difference reflects increase in the number of CLECs following relevant merger date relative to increase expected absent merger (based on activity in other LATAs).

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

firms' merger. Although the increase in CLEC activity in Bell Atlantic/NYNEX LATAs is not statistically significant, the data reveal no systematic and statistically significant decline in CLEC activity in the merged companies' LATAs relative to elsewhere following the merger and thus provide no support for the Katz/Salop hypothesis.

Additional Specification

54. Hayes, Jayaratne and Katz claim that a relative decline in CLEC activity in PacTel's area following the SBC merger provides support for the Katz/Salop hypothesis. This conclusion, however, reflects Hayes, Jayaratne and Katz's failure to perform a comprehensive analysis of CLEC entry patterns, such as that presented above. In order to analyze their claim that CLEC activity fell post merger in some areas, we have estimated an additional specification to analyze post-merger effects separately in areas served by PacTel, SBC, Bell Atlantic and NYNEX. We stress that this alternative model is improper because the Katz/Salop hypothesis predicts that ILEC mergers will adversely affect CLEC activity throughout the entire territory (i.e., footprint) of a merged ILEC, not in just one portion of the merged firm's territory. The results presented above examine the post-merger effect throughout the entire ILEC region.

55. The results of this improper approach reveal that CLEC activity post-merger in PacTel's area continues to grow. While the rate of growth slowed relative to the national trend, this relative decline is not statistically significant in high population LATAs. The results also reveal a significant increase in CLEC activity in SBC areas relative to elsewhere and no systematic or statistically significant patterns in areas served by Bell Atlantic and NYNEX. In summary, even this improper approach fails to provide systematic justification of the Katz/Salop theory. CLEC activity falls relative to the national trend in only 1 of 4 possible regions post-merger and even this result is not statistically significant in all LATAs.²⁹

29. Moreover, this additional specification analysis shows that CLEC activity in the PacTel areas was higher pre-merger than in other areas and that CLEC activity in SBC areas was somewhat lower. Roughly speaking, CLEC activity in SBC and PacTel LATAs converged by

D. CLEC ACTIVITY IS NOT HIGHER IN LATAS SERVED BY INDEPENDENT ILECS AND IN LATAS SERVED BY MULTIPLE ILECS.

1. CLEC activity in LATAs served by Independent ILECs

56. At the recent FCC Roundtable, Professor Katz suggested that CLECs have had particular success in providing service in independent ILECs' territories. He noted that:

... the studies are preliminary and some of the results are mixed, but it has also been coming out that by some rather imperfect measures, the small ILECs ... have had more entry adjusting for market size.³⁰

Prof. Katz suggested that such a finding would provide support for his theory that larger ILECs (such as RBOCs) have greater incentives to discriminate than smaller ILECs. Even with Prof. Katz's highly qualified language, the statement is not supported by an evaluation of the available empirical evidence.

57. We have tested Professor Katz's claim econometrically by performing a regression analysis comparing CLEC activity in LATAs predominantly served by independent ILECs and otherwise comparable LATAs served by RBOCs. As in the regression analyses presented in Section II.B above, the analysis focuses on CLEC activity in 1998Q3 and controls for population, population growth, and the area of the LATA.³¹ The analysis permits the estimated difference in CLEC activity in LATAs predominantly served by independent ILECs and RBOCs to vary with LATA population. That is, the model permits the "small ILEC" effect to differ in more and less populous LATAs. The prediction of the Katz/Salop theory is that the

(...continued)

1998Q3 at a level somewhat above the average for other LATAs. Section II.C.2 above shows that CLEC activity is generally higher in the SBC and PacTel areas than in areas served by other RBOCs, although these differences are not statistically significant.

30. FCC Roundtable transcript, p. 134.

31. The regression excludes the SBC/PacTel and Bell Atlantic/NYNEX effects in order to provide a more general comparison of CLEC activity in LATAs served by small ILECs compared to that in all RBOC territories. Inclusion of these effects does not alter our conclusion that there is no statistically significant elevation in CLEC activity in LATAs served by independent ILECs.

differences in CLEC activity between areas with independent ILECs and RBOCs should be systematically positive, large and statistically significant.

58. The results do not support Prof. Katz's claim. The regression results, summarized in Figure 5 and Table 4, demonstrate that, all else equal, CLEC activity in LATAs served by independent ILECs is not systematically higher in LATAs served by independent ILECs compared to others. Differences in CLEC activity in independent ILEC territories and RBOC territories are only significant in small LATAs, where there is less CLEC activity in areas served by independent ILECs than elsewhere. At larger population levels, the differences are not statistically significant.

59. The analysis reported in Table 4 above treats GTE as a "small" ILEC, an assumption based on its dispersed operation. We also report results that exclude GTE as a small ILEC. This change does not affect our conclusion that, in contrast to the prediction of the Katz/Salop hypothesis, CLEC activity is not systematically higher in areas served by independent ILECs compared to those served by RBOCs.

60. Hayes, Jayaratne and Katz suggest that the (claimed) high levels of CLEC activity in areas served by Frontier, Cincinnati Bell and SNET provide support for the Katz/Salop hypothesis. This conclusion again reflects the inappropriate use of anecdotes instead of systematic statistical analysis. Hayes, Jayratne and Katz, for example, fail to control for other factors that affect CLEC activity in areas served by the ILECs and do not analyze the statistical significance of the claimed differences.³² They also fail to mention that CLECs activity in areas served by other independent ILECs, including Sprint, is lower than expected. The appropriate

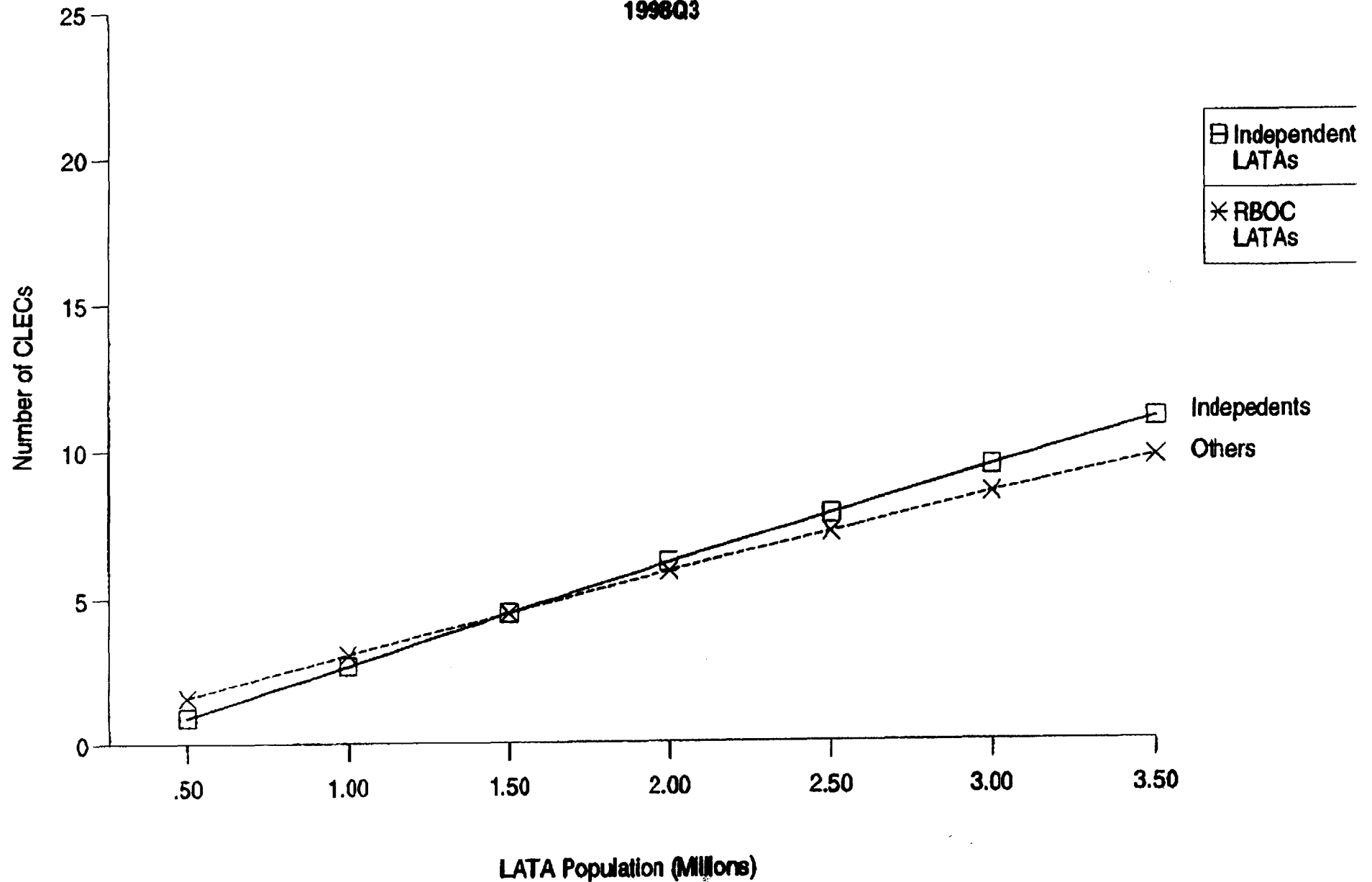
32. We have also estimated a regression analysis using dummy variables for LATAs served by each major independent ILEC (including those discussed by Hayes, Jayaratne and Katz and others) that includes the economic and demographic factors considered in our other regressions. The results indicate that only the elevation for Frontier approaches statistical significance (and even this is not significant at standard confidence levels). Furthermore, the hypothesis that the coefficient on all independent ILEC-specific dummy variables is zero cannot be rejected at standard confidence levels. We stress again that this regression analysis is improper because there is no reason under the Katz/Salop hypothesis to distinguish these independent ILECs from others. Still, even this improper approach fails to support their claims.

Figure 5

Estimated Number of CLECs by LATA Population

Independent LECs and RBOCs

1998Q3



Notes: Estimates derived from regression estimates. Independent LECs are GTE, Sprint, SNET, Frontier, Cincinnati Bell, Allent, Shenadoah Tel Co, Citizens Telecom, United Inter-Mtn Tel, Ill Consolidated Tel, and Navajo Comm Co.

Table 4
Estimated Difference in CLEC Activity in LATAs Served
by Small ILECs and RBOCs

Population (Millions)	Including GTE as "Small"		Excluding GTE as "Small"	
	Difference ^{1/}	Probability ^{2/}	Difference ^{1/}	Probability ^{2/}
.5	-.71	.02*	-.81	.06
1.0	-.37	.35	-.66	.14
2.0	.30	.71	-.38	.61
3.0	.97	.46	-.10	.93
<u>LATA-Specific Differences</u>				
Mean	-.62	-	-.72	-
Population-Weighted Mean	-.09	-	-.52	-
Combined Significance	-	.03*	-	.17

- 1/ Difference between actual and expected number of CLECs predicted based on regression analysis.
- 2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

econometric specification is the one reported above, which evaluates whether CLEC activity in areas served by independent ILECs (taken as a whole) is significantly different than elsewhere.

2. CLEC activity in LATAs served by multiple ILECs

61. The Katz/Salop theory implies that an ILEC in a LATA also served by other ILECs will have a weaker incentive to discriminate because it will not be able to capture all of the benefits resulting from the discrimination. In contrast, ILECs that provide virtually all service in a LATA would be able to capture all of the benefits and (supposedly) would have a greater incentive to discriminate. Our analysis, using the most recent data available (1998Q3) demonstrate that, here too, available data provide no support for the Katz/Salop theory.

62. As described above, we use information on the population served by wire center to approximate various ILECs' shares of access lines served within each LATA. In turn, we use this information to estimate a LATA-specific HHI (the sum of the squares of populations shares served by each of the ILECs within a LATA).³³ This HHI, in turn, is used as an additional variable in using the regression framework outlined above. Again, we allow the impact of HHI to vary with the population of the LATA, to allow the estimated effect of multiple ILECs in a LATA on CLEC activity to differ in large and small LATAs.

63. The analysis reveals that CLEC activity is no different in LATAs served by multiple ILECs compared to those in which one ILEC serves nearly the entire population. The HHI variables do not significantly improve the ability of the regression analysis to explain CLEC activity. Evaluation of the (statistically insignificant) HHI effects reveals virtually no difference in CLEC activity in LATAs served by two equal size ILECs instead of one. Again, these results fail to provide any support for the Katz/Salop hypothesis.

33. If a LATA is served by only one ILEC, the HHI takes on a value of 1; if a LATA is served by two equally-sized ILECs, the HHI takes on a value of .5.

CONCLUSION

64. This memorandum addresses the claim by Profs. Katz and Salop that the SBC/Ameritech merger will lead to increased discrimination against CLECs seeking to enter the local exchange business on a multi-market basis. Our analysis indicates that, as a matter of economic theory, the Katz/Salop hypothesis is based on erroneous assumptions about current conditions in the marketplace for local exchange services. We also show that available empirical evidence fails to support their claim that ILEC mergers adversely affect CLEC activity. Accordingly, their theory should be rejected as a basis for opposing this merger.

65. From a theoretical perspective, the Katz/Salop theory suffers from several significant shortcomings:

- Their theory does not apply to firms that have sunk investments in the "set up" costs that give rise to economies of scope, including the significant number of CLECs that have already deployed facilities and services, and does not imply that activity by such firms will be harmed by the transaction. Indeed, the entry of these firms has already occurred (and thus cannot be precluded) and reduces ILECs' incentives to discriminate against other entrants.
- CLEC entry to date has resulted in the development of interconnection agreements and performance standards that would enable CLECs and regulators to detect discrimination against new CLECs or attempts to increase discrimination against existing CLECs.

66. From an empirical perspective, the evidence provides no supports for the Katz/Salop hypothesis:

- CLEC activity continued to grow nationwide following the SBC/PacTel and Bell Atlantic/NYNEX mergers.
- The current level of CLEC activity in SBC/PacTel and Bell Atlantic/NYNEX regions is not lower than CLEC activity in LATAs served by other ILECs, controlling for

differences in the economic and demographic characteristics of the areas. If anything, the evidence indicates that CLEC activity is higher.

- CLEC activity in SBC/PacTel and Bell Atlantic/NYNEX LATAs did not increase more slowly (and indeed, in some respects increased more rapidly) than elsewhere following these companies' mergers, controlling for LATA characteristics.
- In contrast to Prof. Katz's suggestion, CLEC activity is not systematically or statistically significantly higher in LATAs served by independent ILECs compared to otherwise comparable areas served by RBOCs.

67. Each of these findings alone is inconsistent with the Katz/Salop theory and taken together indicate that the Katz/Salop hypothesis provides no basis for opposing this merger.

APPENDIX 1

Appendix 1

LATAs Served by Major ILECs

LATA Number	LATA Name	State	Population	Largest ILEC
120	MAINE	MAINE	1,241,639	NYNEX
122	NEW HAMPSHIRE	NEW HAMPSHIRE	1,171,620	NYNEX
124	VERMONT	VERMONT	592,436	NYNEX
126	SPRINGFIELD	MASSACHUSETTS	789,953	NYNEX
128	BOSTON	MASSACHUSETTS	5,306,367	NYNEX
130	RHODE ISLAND	RHODE ISLAND	988,764	NYNEX
132	NEW YORK	NEW YORK	11,336,619	NYNEX
133	POUGHKEEPSIE	NEW YORK	830,314	NYNEX
134	ALBANY	NEW YORK	1,329,785	NYNEX
136	SYRACUSE	NEW YORK	1,624,116	NYNEX
138	BINGHAMTON	NEW YORK	660,211	NYNEX
140	BUFFALO	NEW YORK	1,555,722	NYNEX
220	ATLANTIC CITY	NEW JERSEY	423,936	BELL ATLANTIC
222	DELAWARE VALLEY	NEW JERSEY	1,761,855	BELL ATLANTIC
224	JERSEY CITY	NEW JERSEY	6,829,805	BELL ATLANTIC
226	HARRISBURG	PENNSYLVANIA	1,778,377	BELL ATLANTIC
228	PHILADELPHIA	PENNSYLVANIA	5,356,843	BELL ATLANTIC
230	ALTOONA	PENNSYLVANIA	921,820	BELL ATLANTIC
232	SCRANTON	PENNSYLVANIA	1,451,226	BELL ATLANTIC
234	PITTSBURGH	PENNSYLVANIA	2,786,293	BELL ATLANTIC
236	WASHINGTON DC	DIST. OF COLUMBIA	4,117,167	BELL ATLANTIC
238	BALTIMORE	MARYLAND	2,441,320	BELL ATLANTIC
240	HAGERSTOWN	MARYLAND	565,067	BELL ATLANTIC
242	SALISBURY	MARYLAND	294,597	BELL ATLANTIC
244	ROANOKE	VIRGINIA	863,529	BELL ATLANTIC
246	CULPEPER	VIRGINIA	508,387	BELL ATLANTIC
248	RICHMOND	VIRGINIA	1,221,460	BELL ATLANTIC
250	LYNCHBURG	VIRGINIA	380,561	BELL ATLANTIC
252	NORFOLK	VIRGINIA	1,539,951	BELL ATLANTIC
254	CHARLESTON	WEST VIRGINIA	977,682	BELL ATLANTIC
256	CLARKSBURG	WEST VIRGINIA	616,497	BELL ATLANTIC
320	CLEVELAND	OHIO	2,164,723	AMERITECH
322	YOUNGSTOWN	OHIO	598,280	AMERITECH
324	COLUMBUS	OHIO	2,490,024	AMERITECH
325	AKRON	OHIO	1,261,649	AMERITECH
326	TOLEDO	OHIO	1,288,301	AMERITECH
328	DAYTON	OHIO	1,349,645	AMERITECH

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LATA Number	LATA Name	State	Population	Largest ILEC
330	EVANSVILLE	INDIANA	370,563	AMERITECH
332	SOUTH BEND	INDIANA	998,995	GTE
334	AUBURN-HUNTINGTON	INDIANA	559,387	GTE
336	INDIANAPOLIS	INDIANA	2,266,144	AMERITECH
338	BLOOMINGTON	INDIANA	614,690	AMERITECH
340	DETROIT	MICHIGAN	5,307,617	AMERITECH
342	UPPER PENINSULA	MICHIGAN	315,115	AMERITECH
344	SAGINAW	MICHIGAN	982,075	AMERITECH
346	LANSING	MICHIGAN	686,626	AMERITECH
348	GRAND RAPIDS	MICHIGAN	2,333,442	AMERITECH
350	GREEN BAY	WISCONSIN	1,230,377	AMERITECH
352	EAU CLAIRE	WISCONSIN	564,324	AMERITECH
354	MADISON	WISCONSIN	1,045,653	AMERITECH
356	MILWAUKEE	WISCONSIN	2,351,593	AMERITECH
358	CHICAGO	ILLINOIS	8,379,557	AMERITECH
360	ROCKFORD	ILLINOIS	366,444	AMERITECH
362	CAIRO	ILLINOIS	317,580	GTE
364	STERLING	ILLINOIS	221,901	GTE
366	FORREST	ILLINOIS	253,354	GTE
368	PEORIA	ILLINOIS	472,869	AMERITECH
370	CHAMPAIGN	ILLINOIS	290,119	AMERITECH
374	SPRINGFIELD	ILLINOIS	357,711	AMERITECH
376	QUINCY	ILLINOIS	160,350	GTE
420	ASHEVILLE	NORTH CAROLINA	546,017	GTE
422	CHARLOTTE	NORTH CAROLINA	2,147,574	BELLSOUTH
424	GREENSBORO	NORTH CAROLINA	1,458,795	BELLSOUTH
426	RALEIGH	NORTH CAROLINA	1,127,104	BELLSOUTH
428	WILMINGTON	NORTH CAROLINA	409,901	BELLSOUTH
430	GREENVILLE	SOUTH CAROLINA	1,183,949	BELLSOUTH
432	FLORENCE	SOUTH CAROLINA	582,279	BELLSOUTH
434	COLUMBIA	SOUTH CAROLINA	968,295	BELLSOUTH
436	CHARLESTON	SOUTH CAROLINA	595,911	BELLSOUTH
438	ATLANTA	GEORGIA	5,041,508	BELLSOUTH
440	SAVANNAH	GEORGIA	849,752	BELLSOUTH
442	AUGUSTA	GEORGIA	534,010	BELLSOUTH
444	ALBANY	GEORGIA	656,247	BELLSOUTH
446	MACON	GEORGIA	530,267	BELLSOUTH

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LATAs Served by Major ILECs

LATA Number	LATA Name	State	Population	Largest ILEC
448	PENSACOLA	FLORIDA	594,687	BELLSOUTH
450	PANAMA CITY	FLORIDA	307,772	BELLSOUTH
452	JACKSONVILLE	FLORIDA	1,245,877	BELLSOUTH
454	GAINESVILLE	FLORIDA	994,961	SPRINT/UNITED
456	DAYTONA BEACH	FLORIDA	370,554	BELLSOUTH
458	ORLANDO	FLORIDA	1,787,696	BELLSOUTH
460	MIAMI	FLORIDA	5,014,407	BELLSOUTH
462	LOUISVILLE	KENTUCKY	1,483,853	BELLSOUTH
464	OWENSBORO	KENTUCKY	788,806	BELLSOUTH
466	WINCHESTER	KENTUCKY	1,494,299	GTE
468	MEMPHIS	TENNESSEE	1,542,475	BELLSOUTH
470	NASHVILLE	TENNESSEE	1,982,011	BELLSOUTH
472	CHATTANOOGA	TENNESSEE	613,926	BELLSOUTH
474	KNOXVILLE	TENNESSEE	1,075,596	BELLSOUTH
476	BIRMINGHAM	ALABAMA	1,859,645	BELLSOUTH
477	HUNTSVILLE	ALABAMA	752,436	BELLSOUTH
478	MONTGOMERY	ALABAMA	928,917	BELLSOUTH
480	MOBILE	ALABAMA	647,793	BELLSOUTH
482	JACKSON	MISSISSIPPI	2,283,905	BELLSOUTH
484	BILOXI	MISSISSIPPI	346,283	BELLSOUTH
486	SHREVEPORT	LOUISIANA	1,127,795	BELLSOUTH
488	LAFAYETTE	LOUISIANA	866,132	BELLSOUTH
490	NEW ORLEANS	LOUISIANA	1,586,858	BELLSOUTH
492	BATON ROUGE	LOUISIANA	700,509	BELLSOUTH
520	ST LOUIS	MISSOURI	3,525,642	SBC
521	WESTPHALIA	MISSOURI	234,605	GTE
522	SPRINGFIELD	MISSOURI	837,365	SBC
524	KANSAS CITY	MISSOURI	2,268,661	SBC
526	FORT SMITH	ARKANSAS	475,546	SBC
528	LITTLE ROCK	ARKANSAS	1,708,558	SBC
530	PINE BLUFF	ARKANSAS	319,662	SBC
532	WICHITA	KANSAS	1,156,606	SBC
534	TOPEKA	KANSAS	736,912	SBC
536	OKLAHOMA CITY	OKLAHOMA	1,975,529	SBC
538	TULSA	OKLAHOMA	1,299,916	SBC
540	EL PASO	TEXAS	699,876	SBC
542	MIDLAND	TEXAS	389,643	SBC

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LATAs Served by Major ILECs

LATA Number	LATA Name	State	Population	Largest ILEC
544	LUBBOCK	TEXAS	402,907	SBC
546	AMARILLO	TEXAS	404,559	SBC
548	WITCHITA FALLS	TEXAS	233,476	SBC
550	ABILENE	TEXAS	208,959	SBC
552	DALLAS	TEXAS	5,253,056	SBC
554	LONGVIEW	TEXAS	731,384	SBC
556	WACO	TEXAS	595,112	SBC
558	AUSTIN	TEXAS	1,100,879	SBC
560	HOUSTON	TEXAS	4,798,740	SBC
562	BEAUMONT	TEXAS	487,753	SBC
564	CORPUS CHRISTI	TEXAS	728,901	SBC
566	SAN ANTONIO	TEXAS	2,089,852	SBC
568	BROWNSVILLE	TEXAS	915,637	SBC
570	HEARNE	TEXAS	201,411	GTE
620	ROCHESTER	MINNESOTA	730,897	US WEST
624	DULUTH	MINNESOTA	301,818	US WEST
626	ST CLOUD	MINNESOTA	404,369	US WEST
628	MINNEAPOLIS	MINNESOTA	2,826,456	US WEST
630	SIOUX CITY	IOWA	345,448	US WEST
632	DES MOINES	IOWA	1,136,602	US WEST
634	DAVENPORT	IOWA	713,886	US WEST
635	CEDAR RAPIDS	IOWA	668,964	US WEST
636	BRAINERD-FARGO	NORTH DAKOTA	757,981	US WEST
638	BISMARCK	NORTH DAKOTA	313,362	US WEST
640	SOUTH DAKOTA	SOUTH DAKOTA	732,275	US WEST
644	OMAHA	NEBRASKA	1,046,581	US WEST
646	GRAND ISLAND	NEBRASKA	370,652	US WEST
648	GREAT FALLS	MONTANA	540,359	US WEST
650	BILLINGS	MONTANA	332,745	US WEST
652	BOISE	IDAHO	977,552	US WEST
654	WYOMING	WYOMING	469,862	US WEST
656	DENVER	COLORADO	3,048,692	US WEST
658	COLORADO SPRINGS	COLORADO	836,563	US WEST
660	UTAH	UTAH	2,041,079	US WEST
664	NEW MEXICO	NEW MEXICO	1,734,091	US WEST
666	PHOENIX	ARIZONA	3,408,833	US WEST
668	TUCSON	ARIZONA	1,007,785	US WEST

Appendix 1

LATAs Served by Major ILECs

LATA Number	LATA Name	State	Population	Largest ILEC
670	EUGENE	OREGON	1,013,732	US WEST
672	PORTLAND	OREGON	2,646,648	US WEST
674	SEATTLE	WASHINGTON	3,880,034	US WEST
676	SPOKANE	WASHINGTON	1,279,119	US WEST
720	RENO	NEVADA	543,606	PACIFIC TELESIS
721	LAS VEGAS	NEVADA	1,102,428	SPRINT/UNITED
722	SAN FRANCISCO	CALIFORNIA	6,825,387	PACIFIC TELESIS
724	CHICO	CALIFORNIA	559,223	PACIFIC TELESIS
726	SACRAMENTO	CALIFORNIA	1,899,173	PACIFIC TELESIS
728	FRESNO	CALIFORNIA	1,329,262	PACIFIC TELESIS
730	LOS ANGELES	CALIFORNIA	15,374,376	PACIFIC TELESIS
732	SAN DIEGO	CALIFORNIA	2,811,733	PACIFIC TELESIS
734	BAKERSFIELD	CALIFORNIA	575,700	PACIFIC TELESIS
736	MONTEREY	CALIFORNIA	371,432	PACIFIC TELESIS
738	STOCKTON	CALIFORNIA	1,321,450	PACIFIC TELESIS
740	SAN LUIS OBISPO	CALIFORNIA	618,320	GTE
920	CONNECTICUT	CONNECTICUT	3,228,275	SNET
922	CINCINNATI	OHIO	1,765,860	CINCINNATI BELL
923	LIMA-MANSFIELD	OHIO	677,418	SPRINT/UNITED
924	ERIE	PENNSYLVANIA	425,991	GTE
927	HARRISONBURG	VIRGINIA	102,869	GTE
928	CHARLOTTESVILLE	VIRGINIA	146,798	SPRINT/UNITED
929	EDINBURG	VIRGINIA	34,208	SHENANDOAH TEL CO
932	BLUE FIELD	WEST VIRGINIA	166,919	CITIZENS TELECOM
937	RICHMOND	INDIANA	182,916	GTE
938	TERRE HAUTE	INDIANA	179,621	GTE
939	FT MYERS	FLORIDA	893,045	SPRINT/UNITED
949	FAYETTEVILLE	NORTH CAROLINA	877,691	SPRINT/UNITED
951	ROCKY MOUNT	NORTH CAROLINA	1,028,182	SPRINT/UNITED
952	TAMPA	FLORIDA	2,953,568	GTE
953	TALAHASSEE	FLORIDA	289,229	SPRINT/UNITED
956	BRISTOL-JOHNSON CY	TENNESSEE	609,445	UNITED INTER-MTN TEL
958	LINCOLN	NEBRASKA	475,786	ALIAN
960	COUER D-ALENE	IDAHO	261,458	GTE
961	SAN ANGELO	TEXAS	231,862	GTE
973	PALM SPRINGS	CALIFORNIA	342,853	GTE
974	ROCHESTER	NEW YORK	903,198	FRONTIER

Appendix 1

LATAs Served by Major ILECs

LATA Number	LATA Name	State	Population	Largest ILEC
976	MATTOON	ILLINOIS	223,025	ILL CONSOLIDATED TEL
977	MACOMB	ILLINOIS	139,388	GTE
978	OLNEY	ILLINOIS	139,601	GTE
980	NAVAJO TERRITORY	ARIZONA	97,642	NAVAJO COMM CO INC

APPENDIX 2

Appendix 2

Estimated Difference in CLEC Activity in LATAs Served by Merged ILECs and Others

1998Q3

Analysis Excludes LA and New York LATAs

Population (Millions)	SBC/PacTel		Bell Atlantic/NYNEX	
	Difference ^{1/}	Probability ^{2/}	Difference ^{1/}	Probability ^{2/}
.5	-.12	.78	-.39	.40
1.0	.12	.76	-.33	.40
2.0	.59	.32	-.21	.72
3.0	1.06	.26	-.08	.93
5.0	2.00	.25	.16	.93
<u>LATA-Specific Differences</u>				
Mean	.33	-	-.25	-
Population-Weighted Mean	1.09	-	-.08	-
Combined Significance	-	.51	-	.68

1/ Difference between actual and expected number of CLECs predicted based on regression analysis.

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

APPENDIX 3

Appendix 3.1

Estimated Growth in CLEC Activity in LATAs Served By SBC/PacTel Relative to Growth in Other LATAs

Quarter-Specific Regressions: 1996Q1-1998Q3

Analysis Excludes LA and New York LATAs

Population (Millions)	Difference ^{1/}	Probability ^{2/}
.5	.07	.60
1.0	.22	.09
2.0	.52	.01*
3.0	.82	.01*
5.0	1.42	.02*
<u>LATA-Specific Differences</u>		
Mean	.36	-
Population-Weighted Mean	.83	-
Combined Significance	-	.05*

1/ Difference reflects increase in the number of CLECs following relevant merger date relative to increase expected absent merger (based on activity in other LATAs).

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.

Appendix 3.2

Estimated Growth in CLEC Activity in LATAs Served By Bell Atlantic/NYNEX Relative to Growth in Other LATAs

Quarter-Specific Regressions: 1996Q1-1998Q3

Analysis Excludes LA and New York LATAs

Population (Millions)	Difference ^{1/}	Probability ^{2/}
.5	-.30	.11
1.0	-.23	.17
2.0	-.07	.74
3.0	.08	.83
5.0	.38	.57
<u>LATA-Specific Differences</u>		
Mean	-.13	-
Population-Weighted Mean	.08	-
Combined Significance	-	.27

1/ Difference reflects increase in the number of CLECs following relevant merger date relative to increase expected absent merger (based on activity in other LATAs).

2/ * indicates difference is statistically significant at 5 percent confidence level. The probability reflects the chance that the calculated difference would be observed by chance if the true difference was zero.